UNCLASSIFIED

Net-Ready Key Performance Parameter (NR KPP) Brief

Lt Col Scott Moser, JS/J6-I

12 August 2005

Overview

- Background
- Interoperability and Supportability Certification
- Net Ready Approach
- Net Ready Key Performance Parameter (NR KPP) Elements:
  - Net-Centric Operations and Warfare (NCOW) Reference Model
  - Integrated Architectures
  - Key Interface Profiles
  - Information Assurance
- Summary

Relevant Directives and Instructions

Capabilities

CJCSI 3170 (J8)

- Capability Validation Process/Procedures
- ICD, CDD, CPD Format
- **NET READY KPP**

CJCSI 6212 (J6)

- Interoperability and Supportability Certification and Testing
- Methodology for Net Ready KPP Development /Validation

Process

Acquisition

DODD 5000.1
DODI 5000.2
DOD 5000.2R
USD-AT&L

DODD 4630.5
DODI 4630.8
Information Support Plan (OASD-NII)

Operational/Systems/Technical Architecture Infrastructure Support

Testing

TEMP

Systems specs accurately reflect requirements and acquisition documents

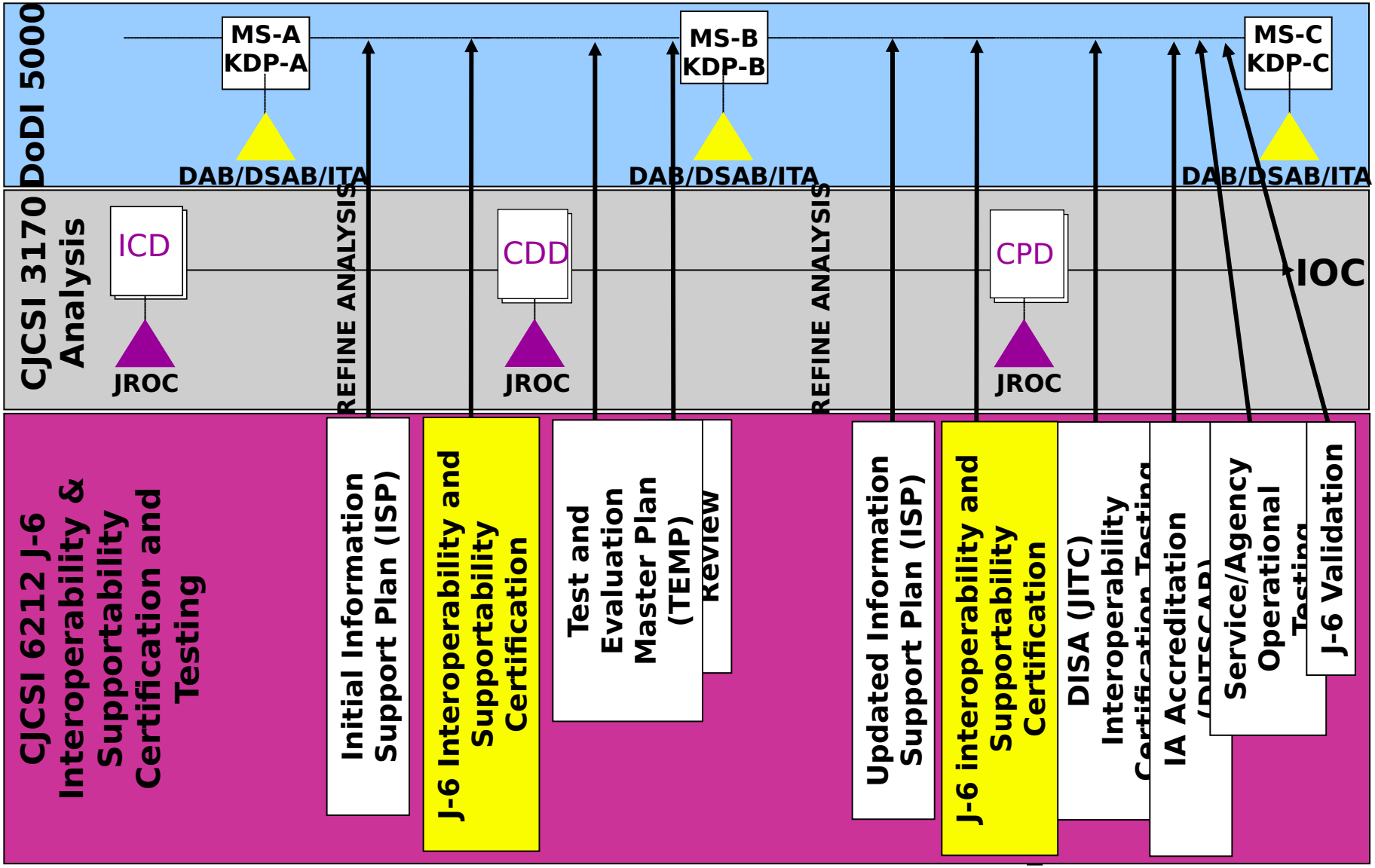
Service/Agency Testing

- DT/Standards Conformance
- OT&E
- Interoperability Testing

DISA(JITC) Interoperability Test Certification

J-6 Interoperability System Validation

Synchronization – DoD 5000 & CJCSI 3170 and 6212



Interoperability and Supportability Certification Summary

IT & NSS Program		JCD	ICD	CDD	CPD	ISP
JCIDS JPD	JROC Interest			C², V²	C², V²	N¹
	Joint Integration			C², V²	C², V²	N¹
	Independent			N³	N³	N³
OSD Special Interest*						N¹
Non-ACAT program						N³
Fielded Systems						N³
Technology Insertion						N³

Requirement

C Interoperability & Supportability Certification
V J6 System Validation
N NR KPP Assessment

Governing Directive

1: DOD 4630 Series
2: CJCSI 3170 and CJCSI 6212.01
3: CJCSI 6212.01E

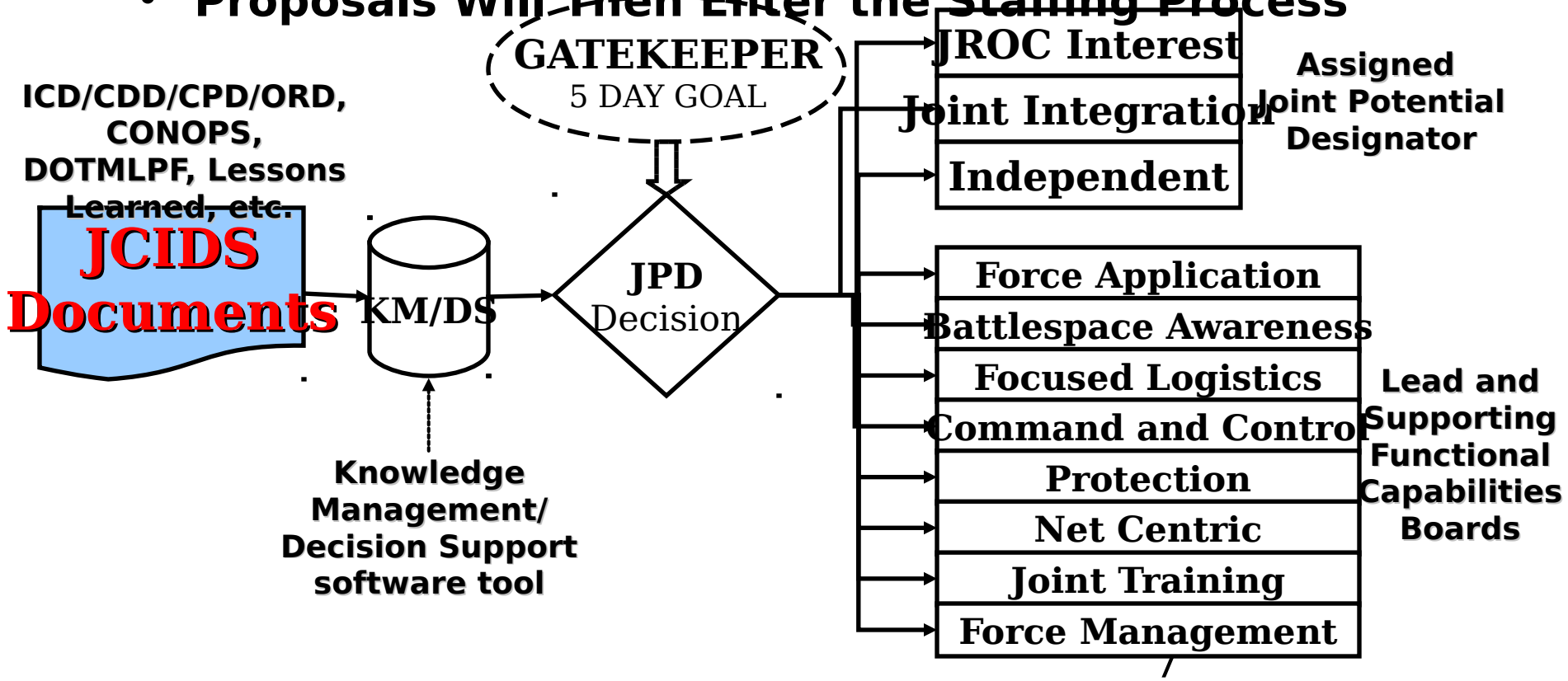
* OSD Special Interest per ASD(NII) Memorandum

Interoperability Certification Criteria

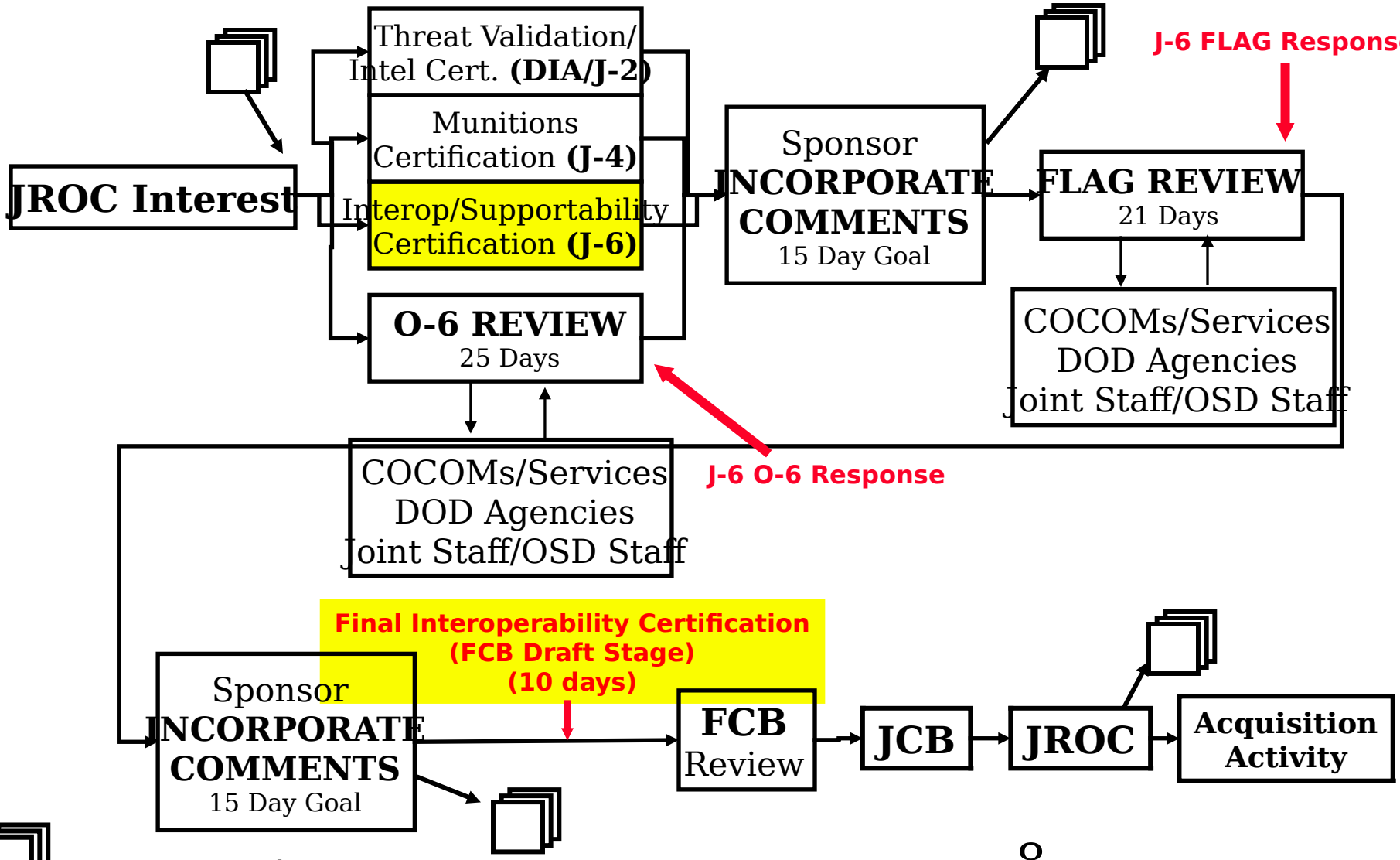
- **JCIDS Documents Staffed by J-8 for Comment/Review and Certified for Interoperability and Supportability by J-6**
- **CJCSI 3170.01, CJCSM 3170.01, and CJCSI 6212.01 format and criteria**
  - **Includes NR-KPP**
    - **Adherence to NCOW Reference Model**
    - **Required Integrated Architecture Products**
    - **Adherence to Key Interface Profiles (KIPs)**
    - **Information Assurance**
  - **System Registration (JCPAT-E and DOD IT Registry)**
  - **Spectrum Supportability and related issues**

JCIDS Gatekeeper Process

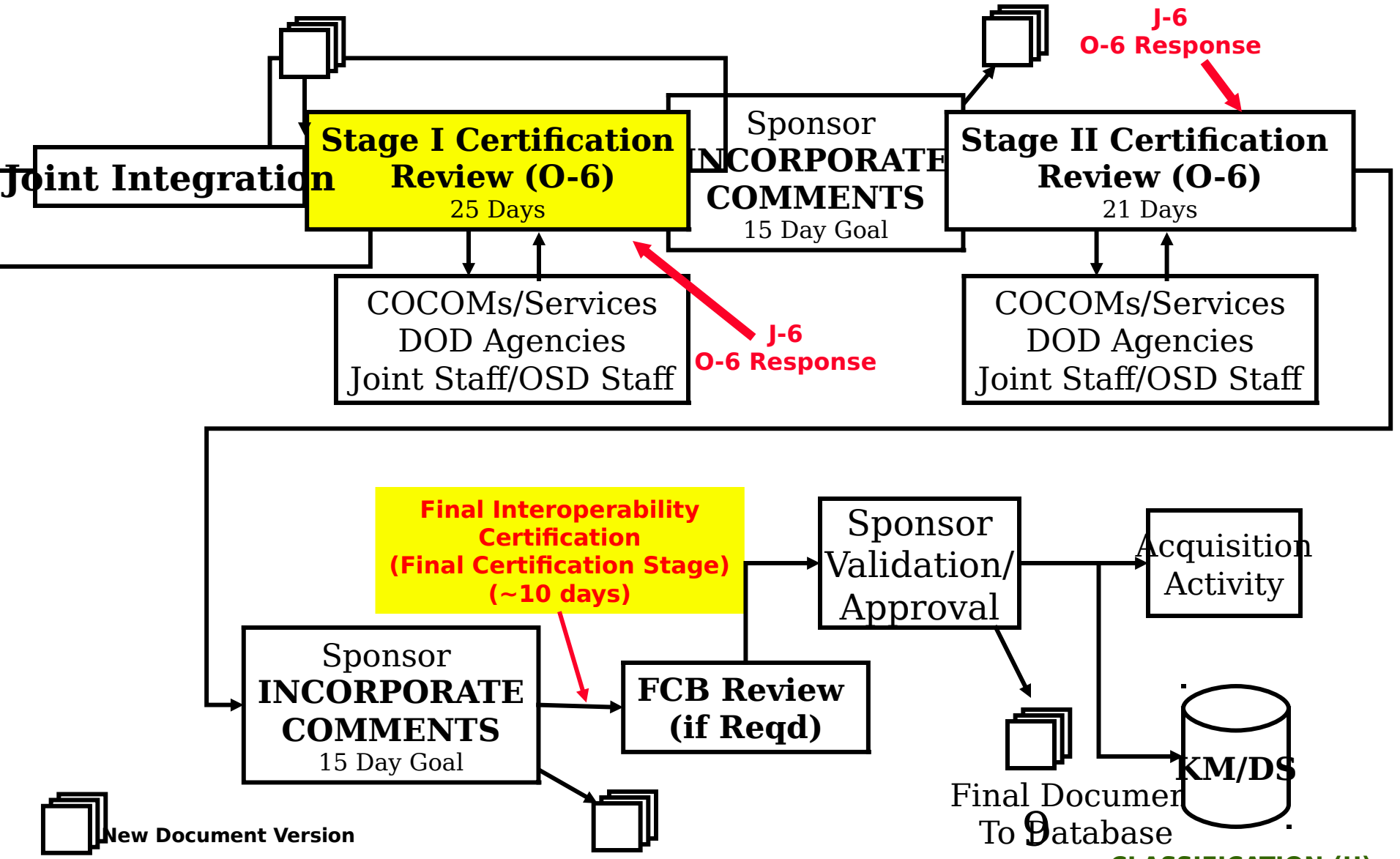
- All JCIDS Proposals Will Be Submitted to the Gatekeeper
  - Joint Potential Designator (JPD) Will Be Assigned
  - Lead/supporting FCBs Identified
- Proposals Will Then Enter the Staffing Process



JCIDS JROC Interest Staffing Process



JCIDS Joint Integration Staffing and Approval Process

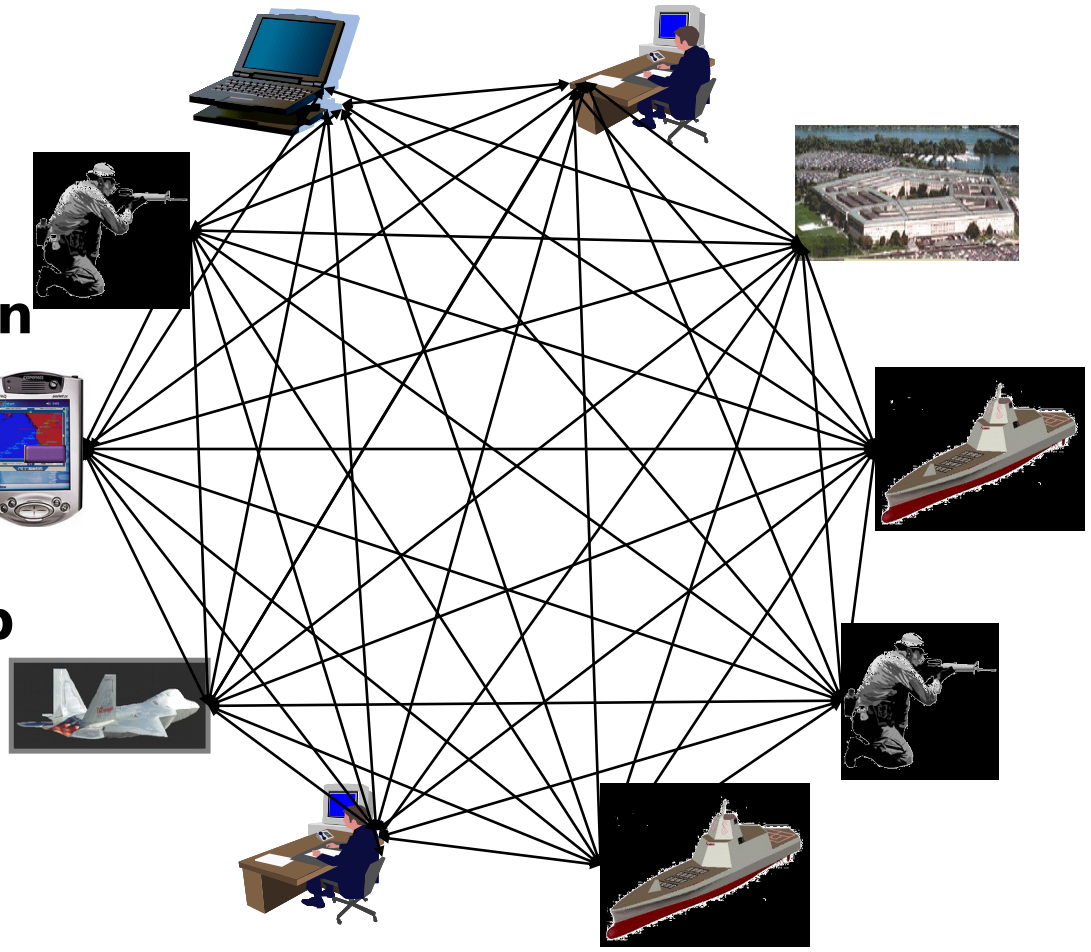


Interoperability before 2003

One-to-One

Interoperability KPP centered around one DoD architectural view (OV-3) that contains "Information Exchange Requirements" (IERs)

- **One-to-one relationship (point-to-point)**
- **Not focused on Net-Centric concept of GIG**



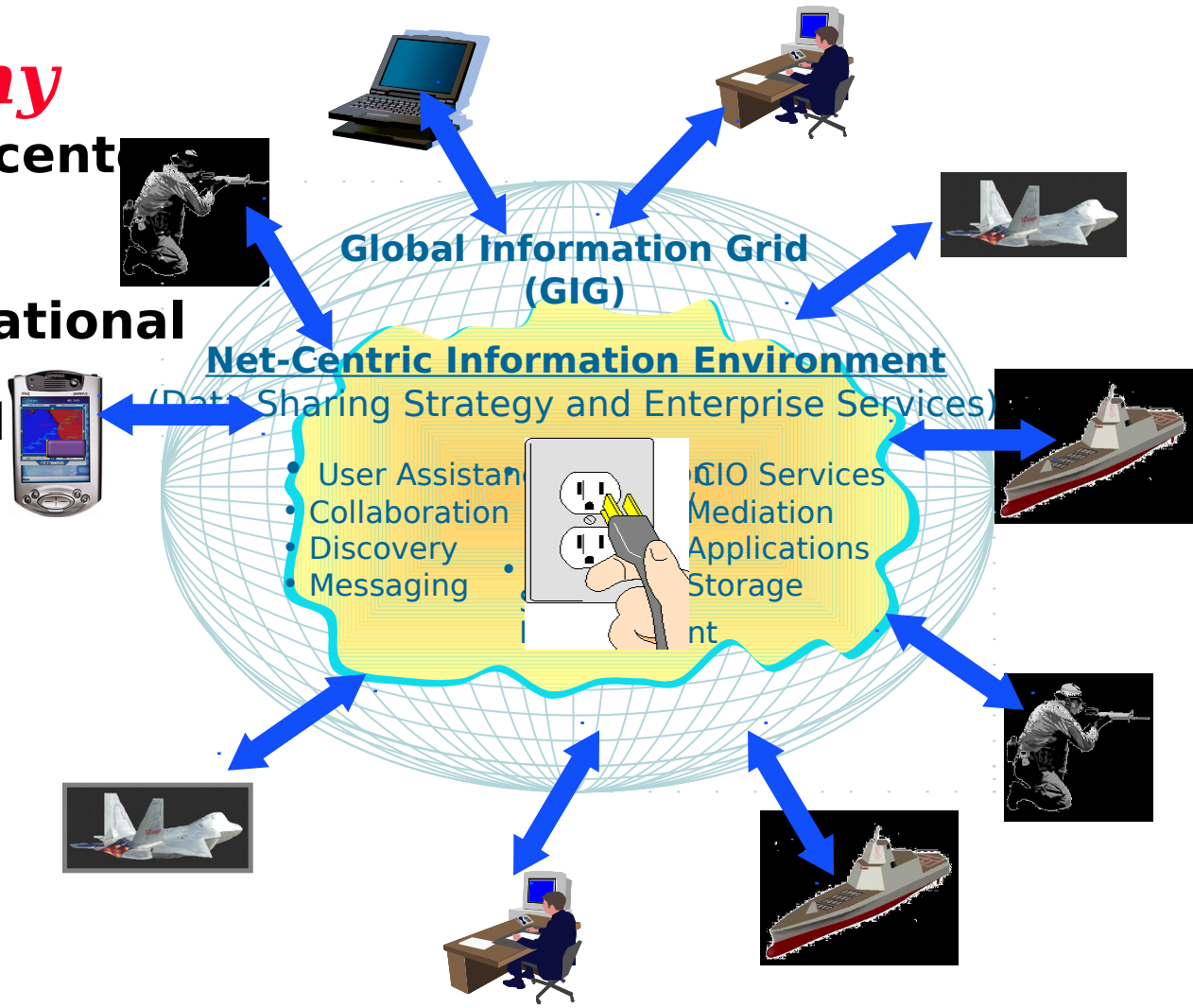
The Net Ready Approach

One-to-Many

Net Ready approach cent on

central network:

- **-- Focus on organizational contributions and consumption of information**
- **– One-to-network paradigm**



NR KPP Compliance Statement

Focus has shift… …entric services, data sharin… …correctness – net rea… …and the Net Ready … …formance Param… …PP)

Net R…	Threshold (T)	Objective (O)
All activity int… …s, s… policy-enforc… …l contro… and data-sh… …of the NCO… RM and GIG… …will be satisfied to … …quirements of the specific… …ntegrated architecture… …cts (including data correctn… …ata availability an… processing), an… …ation assurance accred… specified in the thre… and objective (O) value…	100% of interfaces; …services; policy-… …forcement controls; …data correctness, …lity and pr… requ… designa… enterprise… critical in th… ntegrated archite…	…0% of …rfaces; …ices; policy-… …rcement …rols; and …ectness, …ailability and …ocessing …equirements in the integrated architectures

6212.01D NR KPP (DRAFT)

Net Ready KPP	Threshold (T)	Objective (O)
Net-Ready: The system must provide survivable, interoperable, and operationally effective information exchanges to execute operational activities in support of Net-Centric military operations.	The system must support execution of the threshold critical mission threads identified in the system's integrated architectures and satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Services identified in the OV-5, 4) Information assurance requirements including policy-enforcement controls, data correctness, availability, and issuance of an Interim Approval to Operate (IATO) by the Designated Approval Authority (DAA), and	The system must support execution of the all mission threads identified in the system's integrated architectures and satisfy the technical requirements for Net-Centric military operations to include 1) DISR mandated GIG IT standards identified in the TV-1, 2) DISR mandated GIG KIPs identified in the KIP declaration table, 3) NCOW RM Services identified in the OV-5, 4) Information assurance requirements including policy-enforcement controls, data correctness, availability, and issuance of an Interim Approval to Operate (IATO) by the Designated Approval Authority (DAA), and

Net Ready KPP Elements

1. **Net Centric Operations and Warfare Reference Model (NCOW RM) Compliance**
2. **Supporting Integrated Architecture Products**
3. **Key Interface Profiles (KIPs)**
4. **Information Assurance (IA) Accreditation**

Connects requirements for capabilities to acquisition of capabilities

Net Centric Operations & Warfare Reference Model (NCOW RM) Compliance

NCOW RM Content:

- **Ops Concept Graphics**
- **Integrated Dictionary**
- **Activity Models with Node Trees**
- **Standards Technology Forecast**
- **Data Strategy**

✓ ***P***rovides **common net centric architectural constructs** congruent with the DODAF/DISR.

✓ Establishes a **common language and taxonomy** for NCOW concepts.

✓ Demonstrates and promotes the **TPPU Vision** – (Task, Post, Process, Use)

✓ Defines the ***core IT standards*** required for net-centricity – many web-based: e.g., WSDL, SOAP,
UDDI, MPLS, IPv6, IPSP

NCOW RM

All DoD architectures are expected to comply and conform to the NCOW RM by:

- **Using common NCOW RM definitions and vocabulary**
- **Incorporating the capabilities and services described in the NCOW RM**
- **Incorporating the IT/NSS standards identified in the NCOW RM**

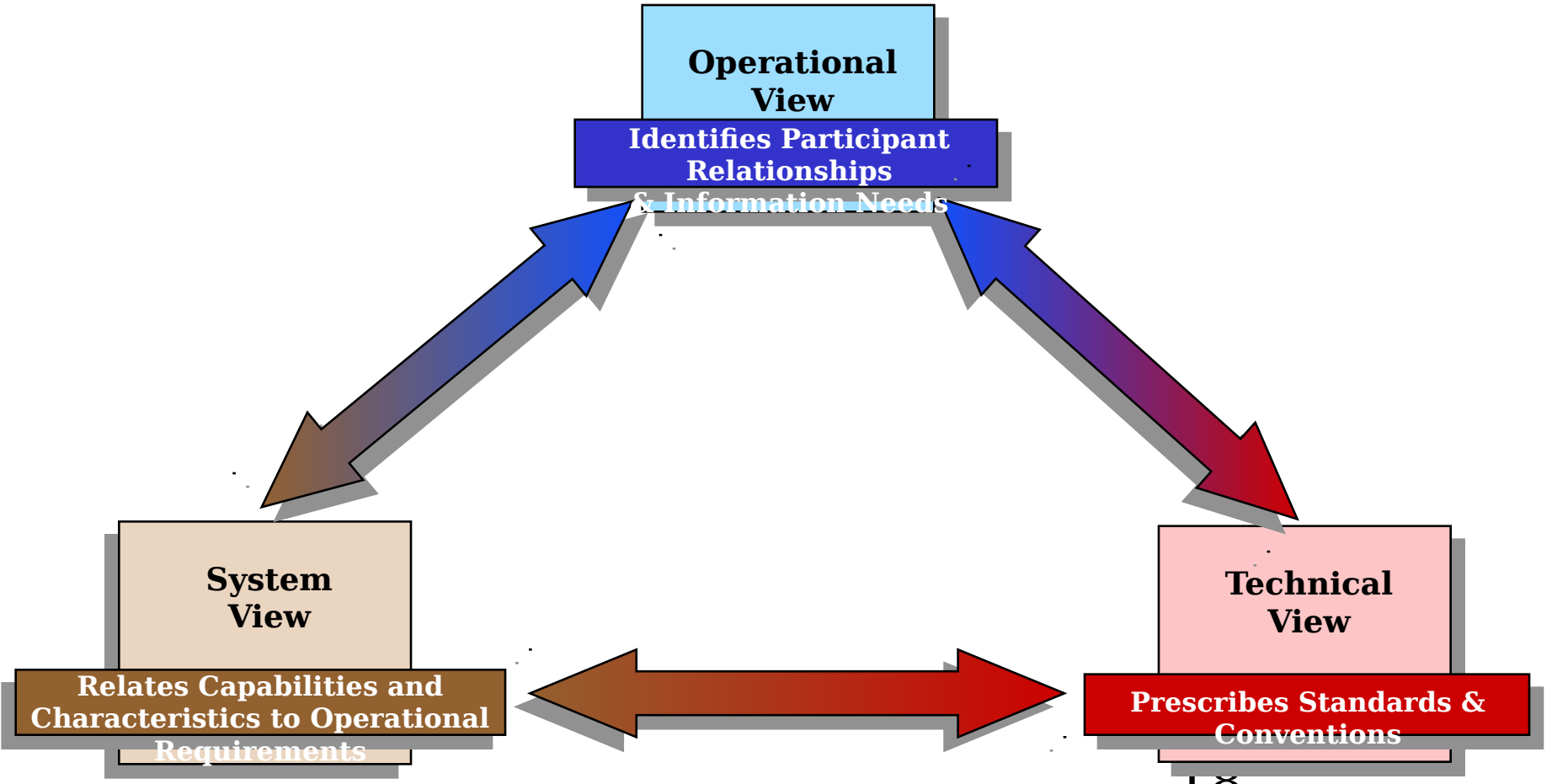
6212.01D Updated issues

- **NCOW RM v1.1 now includes Data Strategy**
- **Testing areas include Data strategy, COIs, enterprise and COI services, standards**
- **Activity model guides OV-5 development**

NCOW REFERENCE MODEL VERSION 1.1
COMPLIANCE ASSESSMENT METHODOLOGY

NET-CENTRIC ASSESSMENT AREA	ARCHITECTURE PRODUCT REVIEW AND ANALYSIS							
	AV-1	AV-2	OV-1	OV-5	OV-6C	SV-1	SV-5	TV-1
Net-Centric Concepts	■		■					
Net-Centric Processes				■	■			
Net-Centric Services						■	■	
Net-Centric Standards								■
Net-Centric Language and Taxonomy	■	■	■	■	■	■	■	■

Integrated Architecture Products



Integrated Architecture Products

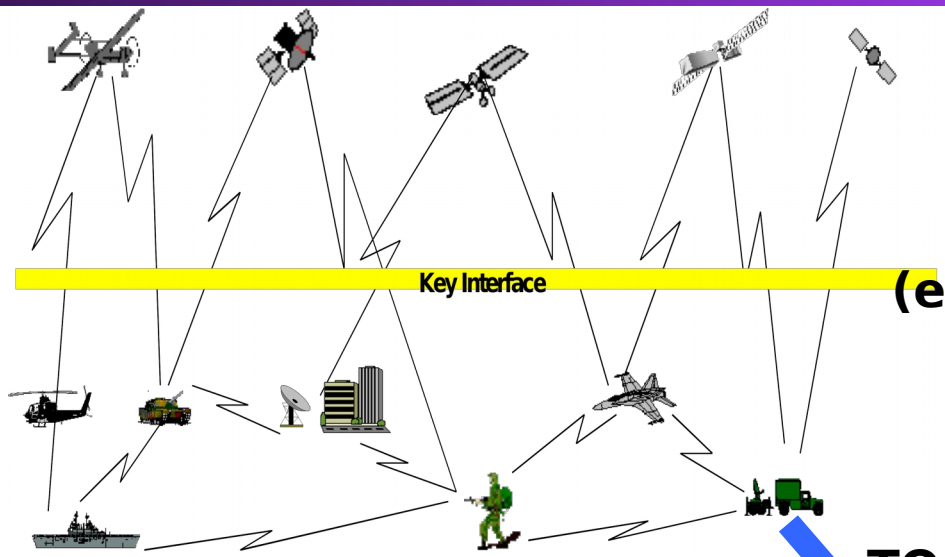
Framework Products	Framework Product Name	General Description
AV-1	Overview and Summary Information	Scope, purpose, intended users, environment depicted, analytical findings
OV-2	Operational Node Connectivity Description	Operational Nodes, operational activities performed at each node, connectivity and information exchange need lines between nodes
OV-4	Organizational Relationships Chart	Organizational, role, or other relationships among organizations
OV-5	Operational Activity Model	Operational activities, relationships among activities, inputs and outputs. Overlays can show cost performing nodes.
OV-6c	Operational Event-Trace Description	One of three products used to describe operational activity sequence and timing – traces actions and specifies event timing.
SV-4	Systems Functionality Description	Functions performed by systems and the information flow among system functions
SV-5	Operational Activity to Systems Function Traceability Matrix	Mapping of systems back to operational capabilities or of system functions back to operational activities.
SV-6	Systems Data Exchange Matrix	Provides details of systems data being exchanged between systems.
TV-1	Technical Standards Profile	Extraction of standards that apply to the given architecture.

te: CJCSI 6212.01D will add requirement for OV-7, SV-2, SV-11 and TV-2. The OV-7 and SV-11 will be used t
plain and show compliance with the DOD Data Strategy. SV-11 not required for CDD.

Integrated Architecture Products

- ✓ **Developed IAW DODAF (DODAF V2.0 in development)**
- ✓ **Facilitate:**
  - **First order analysis - identifying capability gaps, shortfalls and duplications.**
  - **Second order analysis - identifies interoperability requirements.**
- ✓ **6212.01D Changes**
  - **Use of architectures to analyze threshold NR-KPP value**
  - **New architecture views (where applicable)**
  - **CADM compliance (except TV-1 from DISR On-line)**

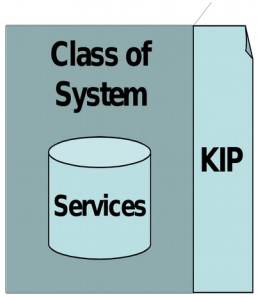
Key Interface Profiles

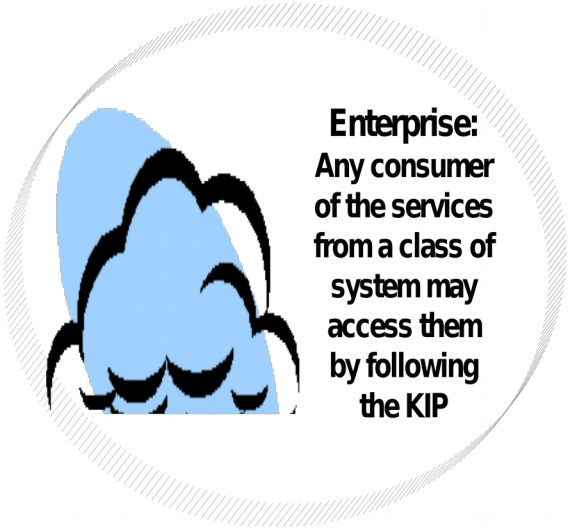


System Focus
(e.g., Space to Terrestrial)

TO

Service Focus





KIP Definition

Key

- The interface spans organizational boundaries
- The interface is mission critical
- The interface is difficult or complex to manage
- There are capability, interoperability, or efficiency issues associated with the interface
- The interface impacts multiple acquisition programs
- The interface is vulnerable or important from a security perspective
- "N-squared" set of point-to-point interfaces already exists or has the potential to emerge
- The number of current and potential providers and/or

Interface

- Rules and technical IT parameters with which the consumer of a service must comply at the interconnectivity point
- If there are multiple providers of the service, they must each use the same technical parameters at the interconnectivity point

DODI 4630.8

6212.01D

Profile

- DoDR 5000.2 mandates the development and vetting of standards profiles as part of the DoD Acquisition Process
- Standards profiles may be lists of standards by name and version, prior to becoming a reference implementation
- Standards profiles, prior to system implementation, are necessary but not sufficient to ensure interoperability
- KIPs specify the parameters of a standard interface that are mandatory for interoperability (Implementation Profiles)
- KIPs include reference implementations that demonstrate the

KIP Documents

KIP Framework (one document)

- First Draft: June 2005
- Final: September 2005

Communications Services Family of KIPs (one document)	Computing Infrastructure Family of KIPs (one document)	Enterprise Services Family of KIPs (one document)
• Technical Rules • Business Rules • Security Rules • NetOps Rules • Data Rules • Profiles - UHF SATCOM - GIG-BE - JTRS . . .	• Technical Rules • Business Rules • Security Rules • NetOps Rules • Data Rules • Profiles - DECC - GCSS-AF I/F - DCGS IB . . .	• Technical Rules • Business Rules • Security Rules • NetOps Rules • Data Rules • Profiles - Service Discovery - Security - Content Store . . .
- Draft v0.9: July 2005 - Final: December 2005	- Draft: Sept 2005 - Final: December 2005	- Draft v0.9 July 2005 - Final: December 2005

Note: Detail of each profile will vary and will increase over time beyond FY05

KIP Document Contents

- ✓ **Refined Operational View (OV)**
- ✓ **Refined System View (SV)**
- ✓ **Interface Control Specifications -- Interface Control Document (ICD)**
- ✓ **System-Technical View (SV-TV) Bridge**
- ✓ **Configuration Management Plan**
- ✓ **Procedures for Standards Conformance and Interoperability Testing utilizing reference implementations**

KIP Families (notional)

Communications

Appendices

Teleport
- UHF SATCOM
- X-Band SATCOM
- C-Band SATCOM
- Ku-Band SATCOM
- Ka-Band SATCOM

SATCOM
Space-Terrestrial
- EHF/AEHF
- MUOS
- APS
- GPS

DISN Customer
DISN Network
Secure Enclave (HAIPE)
- EMSS
- DSN
- DRSN
- DVS
- NIPRNET
- SIPRNET

JIS
JTF-to-Components
- JIS/Internet
- GBS
- IBS
- Link-16
- JTIDS

JTF-to-Coalition
- JTRS
- CENTRIXS
- GIG-BE
- TSAT Ka
- TSAT XDR+

Computing

Applications to COE

DECC
DCGS
GCSS-AF

Enterprise Services

NCES Increment 1
- Client-Server
- App Svr-DB Svr
- End Sys-PKI
- IDM-Dist Infrastr
- Discovery
- Info Svr-IDM Infrastr
- App Svr-Shared Data
- Messaging

(Svcs w/ defined interfaces)
Example
Content
Mediation

NetOps

Mngt Sys to Mng Sys
Mngt Sys to Integ Mgt Sys

NetOps v1.0 August 2005

KIP Use and Responsibilities

KIP Principles

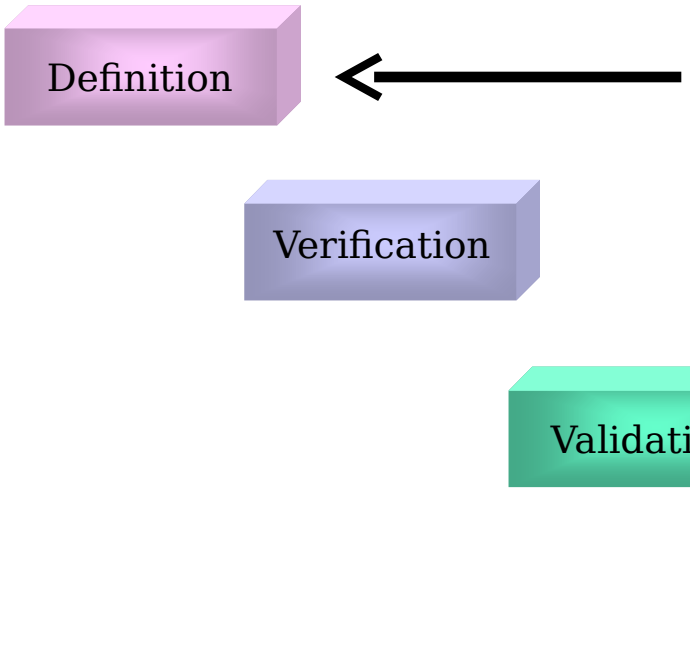
- Key interfaces are viewed from both the consumer and provider perspective
- Consumers and providers each have responsibilities for implementing KIPs
- KIP's life cycles evolve from emerging to mandated just as DOD standards do
- KIPs are not a standards creation process
- KIPs are driven by real programs and IT initiatives

	Consumer	Provider
Emerging	• Identify forecasted key interfaces • Plan for future use of key interface profiles • Plan and program for testing of KIPs	• Work with DISA to document profiles in accordance with system development • Work with JITC to identify test strategy
Mandated	• Identify applicable KIPs • Build system to profile • Conduct standards conformance testing against profile as part of DT	• Adhere to enterprise config mgt of key interface • Update profile • Provide instantiation for testing (if necessary)

KIP 6212.01D Changes

- Mandated vs. Emerging KIPs
- KIP development and approval process
  - Governed by ITSC and ISOP
- Consumer and Provider responsibilities
- Program's KIP Baseline
- KIP Testing
  - Interface standards conformance

Information Assurance Accreditation



The system must fully comply with DODD 8500.1 and DODI 8500.2 and with Phase 1 Definition of DITSCAP (DODI 5200.40). Provide required IA documentation to JS/J6I

Data/Information:

- **Availability**
- **Integrity**
- **Authentication**
- **Confidentiality**
- **Non-repudiation**

INFORMATION ASSURANCE (IA): Information Operations that protect and defend information and information systems by ensuring their availability, integrity, authentication, confidentiality, and non-repudiation.

* DoD Information Technology Security Certification and Accreditation Process

Tailored ISP

- **New option in 6212.01D and in future 4630.8**
  - **Allows certain legacy and rapid acquisition programs to complete interoperability and supportability certification**
  - **Reduced number of architecture products**
- **Final details now in coordination**

Summary

- ✓ CJCSI 6212.01D now in progress (ECD Sept 05)
  - ✓ Change in NR-KPP statement
  - ✓ Changes to NR-KPP documentation requirements, alignment with CJCSI 3170 and testing section